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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,321	02/16/2001	Takaya Sato	8292.013	1858

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EXAMINER

TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 01/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,321

Applicant(s)

SATO ET AL.

Examiner

Susy N Tsang-Foster

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-53 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14, and 31-35, drawn to a multi-layer electrode structure having a first electrode layer formed of different constituents or have different proportions of the same constituents than a second electrode layer, classified in class 428, subclass 212.
 - II. Claims 15-19, 36, and 37, drawn to a battery comprising a multi-layer electrode structure, classified in class 429, subclass 149.
 - III. Claims 20-24, 38, 39, and 53, drawn to a double-layer capacitor, classified in class 361, subclass 502.
 - IV. Claims 25-30, and 40-51, drawn to a method of manufacturing a multi-layer electrode, classified in class 427, subclass 58.
 - V. Claim 52, drawn to a method of manufacturing a battery comprising a multi-layer electrode, classified in class 29, subclass 623.5.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group I and Group II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination

Art Unit: 1745

as claimed because the battery of claim 15 does not recite the particulars of the subcombination in claim 35. The subcombination has separate utility such as a multi-layer electrode structure in a capacitor.

3. Inventions Group I and Group III are related as combination and subcombination.

Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the capacitor of claim 20 does not require the particulars of subcombination in claim 35. The subcombination has separate utility such as a multi-layer electrode structure in a battery.

4. Inventions Group I and Group IV are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by laminating process instead of by the coating process.

5. Inventions of Group I and Group V are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the battery can be made by a laminating process instead of by the coating process.

Art Unit: 1745

6. Inventions Group II and Group III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions of the battery and the capacitor have different modes of function and have different functions and different effects.

7. Inventions of Group II and Group IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the battery can be made by a laminating process instead of by the coating process.

8. Inventions Group II and V are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the battery can be made by a laminating process instead of by the coating process.

9. Inventions Group III and Group IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the capacitor can be made by a laminating process instead of by the coating process.

10. Inventions of Group III and Group V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of

Art Unit: 1745

operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions of the battery and the capacitor have different modes of operation, different functions, and different effects.

11. Inventions Group IV and Group V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions the method of manufacturing the battery of claim 52 has a multi-layer electrode structure where a first electrode layer having a stronger bonding force than the second electrode layer and the first electrode layer has a higher electrical conduction rate than the second electrode layer and none of the method of manufacturing the multi-layer electrode structure mentions this feature and therefore do not produce the battery of claim 52.

12. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

13. This application contains claims directed to the following patentably distinct species of the claimed invention:

In the previous written restriction requirement, the Examiner requested that a single species be elected from two categories. However, it appears that applicants only elected a single species from one of the two categories. After further consideration by the Examiner, there are more patentably distinct species to be restricted in the claims for the electrode material.

The election of species requirement for the above inventions is the following:

Art Unit: 1745

A. If applicants elect the invention of Group I, claims 1-14, and 31-35, the election of species requirement will be the following:

First category:

A single species to be elected for the characteristics of the first electrode layer with respect to the second electrode layer from one of the following species: 1) the first electrode layer has a stronger adhesive strength relative to the current collector than the second electrode layer relative to the first electrode layer, and 2) the first electrode layer has a higher electrical conduction rate than the second electrode layer.

Second category:

A single species to be elected for the electrode material in claims 1-14, and 31-35 from one of the following species: 1) π conjugated conductive macromolecular materials, 2) composite lithium oxides of the formula $\text{LiNi}_y\text{M}_{1-y}\text{O}_2$ wherein M is at least one or more metallic elements selected from the transition metals and aluminum, 3) lithium metal, 4) lithium metal alloys, 5) pyrolytic carbon, 6) pitch coke, 7) graphite, 8) carbon glass, and 9) carbonized organic macromolecular compounds.

B. If applicants elect the invention of Group II, Claims 15-19, 36, and 37, there is no election of species requirement.

C. If applicants elect the invention of Group III, 20-24, 38, 39, and 53, there is no election of species requirement.

Art Unit: 1745

D. If applicants elect the invention of Group IV, Claims 25-30, and 40-51, the election of species requirement will be the following:

A single species to be elected for the characteristics of the first electrode layer with respect to the second electrode layer from one of the following species 1) the first electrode layer has a stronger adhesive strength relative to the current collector than the second electrode layer relative to the first electrode layer, and 2) the first electrode layer has a higher electrical conduction rate than the second electrode layer.

E. If applicants elect the invention of Group V, Claim 52, there is no election of species requirement.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species from each of the categories mentioned above for the corresponding elected invention for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, 1, 15, 25, and 31 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Art Unit: 1745

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

14. A telephone call was made to Matthew Stavish on 10 January 2003 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

15. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

Art Unit: 1745

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

16. Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9310 for regular communications and (703) 872-9311 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/13 January 2003

Susy Tsang Foster